tions, which are to be raised still higher than they are at present; and, when the room is under the superintendence of the matron, the different parties will be strictly private, and one of the objections, often brought against the scheme, avoided. Each compartment contains a double tub, the larger portion of which is intended for washing in, and the smaller, by means of a jet of steam, which will keep the water in a boiling state, to be made to answer the purpose of a copper. A slab of slate is laid in front of the tubs, which will receive the clothes as they are washed. In the published plan, which may be obtained at the building, the washing-room extends round the side of the square, containing in all sixty-four double tubs; but we believe, that certain alterations have been made in the plan, by which the accommodation is extended. At the angle, five coppers are shewn for boiling linen. An apparatus for wringing clothes is shewn on the premises, but there are extensive drying closets, and near them a table for ironing. These rooms occupy the extremity of the building; and near this point is the door of exit. The use of the double washing tub, with ample supply of hot and cold water, of the coppers, drying-room, and ironing apparatus, will be charged for at the rate of one penny for three hours. Mangling, as it might destroy the means of livelihood of many persons, will not be afforded. It has been objected to the plan, that many of the garments would not be free from vermin, and that they might infect others; it is therefore necessary to state, that passing a current of hot air through the clothes, at a certain temperature, is a most powerful disinfecting process, which will entirely destroy the means of contamination.

In examining this building, we saw with some regret, that a mode of construction was adopted in several respects injudicious. In a building to cost 2,000*l.*, indeed in any building, sound construction is always the cheapest. We believe, there is no architect at present engaged, the committee deeming his superintendence would entail unnecessary expense. Poor people always live at the dearest rate, and half the people who build, achieve it at a similar expensive outlay. Unstable building, and future annual disbursement are not thought of at the commencement, but are soon painfully evident. In the present case, we regretted to find, that the framing of all the partitions was not constructed in the best manner, that joists, which support them, were bedded upon blocks, or bricks — instead of continuous sleepers,—and that they were at one end inserted in a wall, without any continuous support; a bit of slate under each joist is a miserable substitute. The joists are of old ship timber, and are about 2 feet 6 inches apart, or the width of the slate flooring, which they support. The provision for draining the ground, behind the wall placed against the foot of the hill, is scarcely satisfactory; every precaution should be taken on such a site.—It only remains to be stated, that the different rooms are lighted by windows in the ceiling, or close beneath it; that ventilation is provided for by openings in the roof, and that the timbers are open, and stained with asphalte, as a protection from the steam, and that the whole is slated. The place is open to inspection.

NEW APPLICATION OF AIR AS MOTIVE POWER.

A PATENT mode of working a railway, deemed so safe by its conductors, that the company who adopt it, propose to make every ticket issued a policy of insurance upon the life of the passenger, so that in the event of accident, or death, he or his representatives will have a claim of so much a year upon the company for life, demands consideration. The project alluded to is the invention of Mr. Nichols, and is a new application of air as a motive power. A model has been laid down on Messrs. Keene's premises in the York-road, and is in daily operation. It works by means of condensed air, instead of an ordinary atmospheric against a vacuum, and the arrangement is novel. A tube, with air-tight compressible sides, and a partition down the middle of it, so as in reality to form two tubes, is laid in the centre of the line between the rails. Strongly compressed air is admitted into this, which suddenly inflating the pipes, their sides impinge upon two drums, or large wooden rollers, pressing upon them, which are by that means set in motion, and these being fixed by simple mechanism to the carriage above, carry it off with astonishing velocity, the conductor at the same time retaining a control of the movement.

The action, it will be seen, is that of the wedge; two or three superficial objections to the mode of applying power occur to us at the moment, sufficient to prevent us from expressing any opinion upon it at first sight, but certain it is that by the model exhibited, great speed is obtained, and very little air used.

THE INTELLECTUAL IMPROVEMENT OF OUR OPERATIVES.

SIR,—Your correspondent, of the 4th inst., *A Journeyman Carpenter*, makes the following request:—"What are we to do?" As he has alluded to my remarks, of the 4th inst., in THE BUILDER, I will endeavour to offer an answer to his request. In the first place, I will make a few extracts from my "Address to the Manufacturers, &c.," which I published in 1838, to induce the manufacturers and the legislature to establish schools of art, on a true foundation. Now, as there is no true artistic school established, it is evident that neither the one nor the other have that knowledge of the subject—the due cultivation of the faculties for the arts—which they ought to have, or they would have established, long before this, such schools for artistic instruction as the artisans of this nation should and are entitled to have; and if both parties knew their own interest, they would not have neglected the important duty they were long ago called upon to perform; the master manufacturers would have had more skilful artisans, and have stood unrivalled in every excellence that mind, handicraft, and machinery could produce, and the legislature would have made, by its wisdom, an intellectual and grateful people, capable of appreciating its legislatorial labours. In the first page of my address, above alluded to, are the following remarks:—"We know that no two human beings have ever been seen exactly to resemble each other in body or mind, and yet we conclude that mankind should think and act alike, and equally agree on all subjects whatsoever. In the belief of this, we are continually establishing schools of education for the purpose of making all equally informed; but what is the result? Any thing but what it ought to be," and, in page 2: "Throughout the whole of nature, variety is a striking feature. In plants and flowers, as regards their forms and colours, how often is it stated, in those qualities there is no difference. No one ever saw two roses or two blades of grass alike, or one pea perfectly corresponding with another. Knowing this, and that the highest of animated beings in the scale of intellect vary as much as the lowest order of the animal kingdom, we ought not to be surprised at the failure of the present educational systems, as they do not embrace a legitimate exercise of the faculties for the arts, and are consequently unsuited to the nature of the human mind," &c. Pages 3 to 11:—"How often has it been said that genius is buried in cellars and attics, and yet no one found to relieve it from that thraldom. But if a national system of education be soundly established, and based entirely upon a thorough knowledge of human nature, we should then have no genius wasted, no faculty lost, and the whole power of the human mind turned to good account. We should then see this nation rise in the greatest of all her resources—manufactures—and which it is at present so much in need of. Our manufactures have long been defective, through the arts being at such an immeasurable distance from them. The designs which constitute the ornamental part of our goods being imitative instead of inventive, keep us in the back ground, and lower us into the degraded state of servile imitators, of which no nation in the scale of intellect should ever allow itself to be. To raise ourselves, then, from this state of degradation, schools of art should be established in every city and manufacturing town throughout the United Kingdom, that the rising generation may no longer be excluded from that source out of which so much valuable knowledge springs. Such schools of art should be formed for the purpose of opening the wide field of nature, that the true foundation may be laid in the youthful mind, when the only materials for forming new arrangements and combinations will be received quickly, and permanently held, and so an endless store of information will be laid up in their minds for design—original thinking and invention.

To bring youth of different capacities to the fullest development of their peculiar powers will be more or less successful, according as their instructors are men of intelligence, of enlightened minds, and well informed on that part of creation that they undertake to demonstrate. Artificialists will be worse than useless, as they will worry the minds of their hearers with worn-out, backneyed notions, instead of bringing to view nature's ever-varying features, which she is always ready to bestow.

On the supposition that men who have been active observers of nature, and well able to demonstrate that which they undertake to do, will be appointed, the mechanic will be raised in the scale of art, and have the power of delineating naturally all that he may contemplate constructing, and become a producer of good forms, instead of those of commonplace, which we too often see in every kind of manufacture," &c.

The instruction of our youth, to fit them as designers and artisans, should be conveyed by the demonstrators, by drawing on the *black board* all the rules for producing the object required on a large scale, that all the students may see them at one and the same time. This mode of conveying the information must be carried through from the rules of art—such as the construction of the geometrical problems, to the perspective appearances of nature's productions in the vegetable and animal kingdom;—shewing to the whole class the value of the rules in their application to all objects that are required to be drawn. Demonstrations of anatomy, of botany, chemistry, mechanics, and as much more of natural philosophy as can be obtained from the instructors, will be of the greatest consequence to the students intended for designers, as well as to artisans. Architecture, in its varied styles, must be explained, and its fitness for the purposes required, making that the first point for consideration in building, as well as its adaptation in form to the features that surround it.

As all knowledge must take its rise in nature, we should no longer have recourse to art—that is, the notions of others of the things we wish to be informed upon, instead of the things themselves, and which are within the reach of every one. Why should not our rising youth be directed to the fountain-head, and become original thinkers, instead of having the works of others placed before them for imitation? If the works of the ancient masters, as painting, sculpture, and architecture, stand supremely high in every variety of natural representation, should not that be a sufficient reason for directing our youth to do as they did, and become active observers in nature's boundless field, instead of being imitators of all sorts of art, much of which is of no use whatever, and indeed highly injurious. This round-about way of endeavouring to acquire knowledge should be immediately given up, and decryed in every part of the kingdom as being quite unworthy of this great nation. I do not wish it to be understood that engraved imitations of fine art in painting, sculpture, and architecture, are to be kept from the student's view—far from it; for works of art of that kind should be in every school establishment that the labours of great minds may be seen, but not to be placed as examples to be studied from, as that would be sure to bias the mind, and dispose it to copy, instead of gathering new materials for original works.

There is one point, above all, that I consider to be of the utmost importance in the instruction of youth as regards design, and that is, the greatest care should be taken by the instructors not to *enforce* their notions, or any others, of design, on their pupils, as that would have a tendency to destroy the peculiar combinations, arrangements, contrivances, and other qualities of the varied minds of the students, and thus arrest the progress of originality. There is nothing more mischievous than to endeavour to ingraft the peculiarities of one mind on that of another, which may no

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